SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS

ITEM NO.	SUPPLIES/SERVICES	QTY	UNIT	AMOUNT
0001	Engineering and technical support for research, development, design, and fabrication of High Definition Electro-Optical Camera Systems (HDEOCS	1	LT	Estimated Cost $_____
0002	Data in accordance with the attached DD 1423 - Contract Data Requirements List	1	LT	*NSP *NSP
0003	Support costs consisting of Travel and Material at actual cost plus G&A (No Fee)	1	LT	**NTE $ 951,425.00

Total Cost:
$_____

 *NSP - Not Separately Priced, included in the price of CLIN 0001
**NTE – Not to Exceed

Contract Type: This is an Indefinite Delivery/Indefinite Quantity, Cost (Completion) type contract which provides for the issuance of delivery orders during the period from the date of award of the contract through three (3) years thereafter.

As referred to in paragraph (b) of clause 52.216-22 entitled "INDEFINITE QUANTITY", the contract minimum quantity is a total of $25,000.00 worth of orders; the maximum quantity is the total cost as stated above. The maximum quantity is not to be exceeded without prior approval of the Procuring Contracting Officer.

The Government shall have unlimited rights in technical data delivered under this contract. Unlimited rights as defined in clause 252.227-7013, incorporated by reference in this contract, means the right to use, duplicate, release, or disclose technical data or computer software in whole or in part, in any manner whatsoever, and to permit others to do so.

SECTION C – DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

I. INTRODUCTION

The Naval Surface Warfare Center Carderock Division (NSWCCD) Business Directorate provides visual data to the Division for test documentation and evaluation of hydrodynamic and hydroacoustic phenomenon as they relate to ship, submarine, other craft in support of sponsors such as the Naval Sea Systems Command, other government agencies, and private parties.
The visual data is utilized for performance predictions in terms of speed, power, seakeeping, and acoustic characteristics.

Visual information is critical to evaluation and verification of test data. By utilizing the enhanced visual and spatial resolution of High Definition Electro-Optical Camera Systems (HDEOCS) our researchers will gain an enhanced ability to predict and characterize event phenomenon. Therefore, the most important area of contractor support is in the development of the complete HDEOCS. This includes the facilities to perform specified HDEOCS experiments and more importantly, providing design, engineering, maintenance, and fabrication of the required systems.

II. SCOPE OF WORK

The contractor shall provide the research, engineering, fabrication, designs, manpower, materials, equipment, maintenance support, and replacement parts for the services listed below. The support provided is subject to the delivery orders, which define the tasks to be performed in accordance with the Statement of Work.

Task Area 1 - Underwater Testing Integration, Surveillance, Super High Definition Monochrome, and HD Color Systems (Theoretical and Experimental)

Research, develop, engineer, and fabricate a variety of HDEOCS that can be utilized for a variety of NSWCCD missions. Many missions require the use of these camera systems underwater, in remote surveillance modes, use of super high definition monochromatic sensors that require flexible physical architectures.

Task Area 2 – Sensor Architecture, Sensor Types, and Colormetrics and Sensitivity

Research, develop, engineer, design, and fabricate a variety of sensor architectures which result in color cameras that have minimum basic progressively scanned image resolution of 1000 vertical lines and a horizontal resolution of 1980 pixels. Sensor architecture must meet minimum resolution goals but does not exclude use of designs ranging from 1 to 5 sensors. The contractor shall explore the various sensor architectures with the understanding that they must be recorded, transmitted, and archived using existing or beta level systems.

Research, develop, engineer, design, and fabricate Black and White sensor architectures for the creation of super high definition motion images. The contractor shall explore issues of vertical and horizontal resolution; the resulting systems will have minimum vertical resolution 2000 line and

horizontal resolution of 3000 pixels. The offeror shall explore the development of high-resolution high-speed systems.

The contractor shall explore use of alternative sensor types to include Complementary Metal Oxide Semiconductor chips with Active Pixel Sensor technology, but not excluding new developing technologies.

Research, develop, engineer, design, and evaluate the use of different color sensor combinations to derive full color images using for example cyan and yellow or other combinations. Develop methods of increasing color resolution without increasing bandwidth. Explore and evaluate the use of Isoluminate Color, Digital Video Processing, and other methods to attain this goal. Develop and evaluate the use of sensors, which enhance sensitivity in the near infrared.

Task Area 3 – Size, Weight, Power Consumption, Bandwidth, and Temperature

Research, develop, engineer, and manufacture prototype systems that will reduce power consumption, size, weight, bandwidth, and temperature of the requested HDEOCS. Examine the use of ASIC, FPGA technology, and other new technologies to achieve these goals.

Task Area 4 – Scan Formats

Research, develop, engineer, and manufacture multi-format-scanning capabilities in the various HDEOCS platforms.

Task Area 5 – HDTV Video Compression

Develop HDTV video compression technologies that would allow recording on standard definition recorders and raid systems. Develop and manufacture the required software and hardware interfaces.

Task Area 6 – Interfaces, Data Links, ATM, Digital Processing

Research, develop, and manufacture as required the software and hardware interfaces between the various components of the HDEOCS platforms. Additionally explore and utilize advanced technologies for data links, ATM, and digital processing as they develop.

Task Area 7 – Emerging Technologies and Requirements

As the technologies and requirements for HDEOCS platforms advance and change the contractor must demonstrate the capabilities to advance with emerging and changing technologies and requirements.

III. DELIVERABLES

The contractor shall provide data deliverables in accordance with the DD Form 1423 included in Section J of this document. Instructions for deliverables other than data shall be specified in each delivery order.

IV. GOVERNMENT FURNISHED INFORMATION

Government furnished information (GFI) will include data and documentation pertinent to the performance of delivery order tasks. Specific GFI will be listed in each delivery order, when applicable.